



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,384	10/16/2003	Muqtada Husain	10541-1868	2103
29074	7590	09/06/2005	EXAMINER	
VISTEON C/O BRINKS HOFER GILSON & LIONE PO BOX 10395 CHICAGO, IL 60610			LUM VANNUCCI, LEE SIN YEE	
			ART UNIT	PAPER NUMBER
			3611	

DATE MAILED: 09/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/687,384

Applicant(s)

HUSAIN, MUQTADA

Examiner

Lee Lum

Art Unit

3611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 11-20, 25 and 26 is/are rejected.
- 7) ☒ Claim(s) 7-10 and 21-24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

1. A Request for Reconsideration was filed 7/11/05 in which Claims 25 and 26 were also added.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Claim is unclear because, *as best understood*, the controller does not "determine the current draw of the motor".

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 15-17, 25 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Bohner et al 6220385.

Bohner discloses a system for providing an end-of-travel feedback from a road wheel to a driver of a vehicle, the vehicle having a steer-by-wire system, the system comprising

Steering mechanism including steering wheel 10, steering shaft 9, and linkage including elements 3 and 4,

Clutch 6 coupling the steering shaft with the road wheel (c5, In 7-11) when the road wheel is at an end-of-travel position, as well as any inclusive position, and,

Controller 28 determining when the road wheel has reached the end-of-travel position (as well as any inclusive position), via steering shaft sensor 13, and road wheel angle sensor 14, and engages the clutch in response.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

A. **Claims 4 and 18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bohner in view of Serizawa et al 5347458.

Bohner does not disclose the control of the clutch as actuated based on a rate of change of the road wheel angle, while Serizawa shows this sensor in c4, ln 10-11. It would have been obvious to one with ordinary skill in the art at the time the invention was made to include this configuration, as shown in Serizawa, to increase control over the steering linkage, via this data, thus increase handling and safety.

B. **Claims 5, 6, 12, 19 and 20** (*6 as best understood*) are rejected under 35 U.S.C. 103(a) as being unpatentable over Bohner in view of Andonian et al 6681881.

Re **Claims 5 and 19**, Bohner does not disclose the wheels as controlled by motors, while Andonian shows these extremely well-known components 20, 26. It would have been obvious to one with ordinary skill in the art at the time the invention was made to include these elements, as shown in Bohner, as a well-known feature in a steer-by-wire system providing control over the road wheels, thus increasing performance and efficiency of this type of system.

Re **Claims 6, 12 and 20**, Bohner does not disclose the engagement of the clutch based on the current draw of the motor, while Andonian shows this arrangement with motors 20, 26, including a current sensor (c2, ln 50-52). It would have been obvious to one with ordinary skill in the art at the time the invention was made to include this configuration, as shown in Andonian, to provide additional data by which to operate the wheel motors, thus increase its proper function, and operational life, as well as increase passenger safety.

C. **Claims 11 and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bohner in view of Dilger et al 6219604.

Re **Claim 11**, Bohner does not disclose a restriction of the road wheel via a sensor, while Dilger shows a similar steering system including

A sensor/mechanism (unidentified) in c7, ln 7-10 that detects a restricted road wheel.

It would have been obvious to one with ordinary skill in the art at the time the invention was made to include this configuration, as shown in Dilger, to further increase the accuracy of the steer-by-wire system via detection, and resolution, of this particular travel condition, thus maximize safety and comfort.

Re **Claim 13**, Bohner discloses a road wheel angle sensor as discussed above.

D. **Claim 14** is rejected under 35 U.S.C. 103(a) as being unpatentable over Bohner in view of Dilger, and in further view of Serizawa.

The previous references do not disclose the clutch as actuated based on the road wheel angle, while Serizawa shows this sensor as previously discussed.

Art Unit: 3611

5. **Claims 7-10 and 21-24** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Prior art does not disclose the system described above further comprising, *inter alia*, the controller disengaging the clutch when the steering wheel is rotated away from the end-of-travel position.

6. **RESPONSE TO REMARKS**

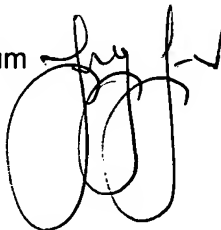
In consideration of Applicant's remarks, Examiner has provided new rejections, employing Bohner, and in view of Serizawa, etc.

7. **Communication with USPTO/Examiner**

Any inquiry concerning this communication, or others, should be directed to Ms. Lum at 571 272-6649, M-F, 9-6. If attempts to reach the examiner are unsuccessful, her supervisor, Ms. Lesley Morris is at 571 272-6651. Our fax number is 571 273 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for unpublished applications: private PAIR only, for published applications: private or public PAIR. For more information re PAIR: <http://pair-direct.uspto.gov>. Questions re private PAIR: contact the Electronic Business Center (EBC) at 866 217-9197.

Ms. Lee S. Lum  
Examiner  
8/30/05

A handwritten signature in black ink, appearing to be 'Lum', written over a large, stylized circular mark.